

REMARKS

Applicant's attorney is appreciative of the interview granted by Examiners Lewis and Patel on December 17, 2009, attended by Applicant's attorney, the Applicant and a translator.

As discussed at the interview, Applicant has now submitted a substitute specification for the purpose of changing certain terminology that was incorrectly translated in the original application. Thus, the term "orthodontic appliances" has been used throughout, and "arch" has been changed to "archwire" and "arcade" has been changed to "arch." In addition, in the first complete paragraph on page 3 of the marked-up substitute specification, the term "coming out of" has been changed to "disengaging from" in order to more accurately describe the prior art problem. No new matter has been added.

In accordance with the changes to the substitute specification, a new abstract has been added to the application.

Claims 11-16 stand rejected under 35 USC 103(a) over Hakansson et al in view of Casey.

Claim 11 has now been amended and recites an improvement to an orthodontic appliance adapted to be disposed in the mouth of a patient comprising a molar tube and an archwire having an end projecting from a distal end of the molar tube. The improvement comprises a protective element constructed and arranged to cover or engulf the end of the archwire and a fixing element integrally joined to and extending from the protective element and fixed around the molar tube to secure the protective element over the archwire. This description of the invention is clearly supported by the drawings of the present application.

In addition, Claim 11 has been amended to recite that the

protector prevents disengagement of the archwire from the molar tube.

In the aforementioned paragraph on page 3 of the substitute specification, Applicant has described three circumstances which present problems with the end of the archwire which projects from the distal tube. In one case, when the archwires are thin and they move towards one of the sides, they prick the mucous membrane on one side and disengage from the molar tube at the opposite side. In addition, when the orthodontic appliance performs the correction to the teeth, the length of the dental arch decreases leaving extra archwire on both sides of the arch. In the third situation, the molar is rotated, causing the distal part of the molar tube to directly face the cheek mucous membrane; the archwire then pricks the mucous membrane.

As the stated object of the invention is to overcome these problems, Applicant submits that it is accurate to state that the invention prevents disengagement of the archwire from the molar tube.

Hakansson et al discloses a basic orthodontic appliance, which is recited in the first paragraph of claim 11 as prior art.

Casey discloses a protective element including a cap and a loop, but the purpose of this cap is to protect twisted ligature wire ends. As demonstrated at the interview, and as shown in the exhibit submitted with the previous response, the end of the archwire is clearly different from the twisted ligature wires. However, in addition to locating the protective device of the invention is a different place on the appliance, by securing the protective element around the molar tube, there is an unexpected result: the archwire does not disengage even with thin wires, as the length of the arch changes and as the molar rotates. This is clearly an

advantage, as the archwire will not need to be replaced as often.

Casey does not disclose or suggest utilizing the protective cap to secure the ends of the archwire to the molar tube; while Casey does use the cap to protect the ligature wires, the cap is secured only to the ligature wires and is not secured to any other part of the orthodontic appliance.

New Claims 17-26, discussed at the interview, have now been added to the application. New Claim 17 recites that the improvement is an oral mucous membrane protector comprising a cap and an elastic ring. The cap has a closed end and an open end surrounded by a wall with the end of the archwire being received in the open end. The elastic ring is integral with and extends from the wall in a direction opposite to the closed end and is fixed around the molar tube to secure the cap over the archwire. The elastic ring extends over a portion of the wall limited such that the elastic ring does not extend over the open end of the cap. The structure of the cap and the elastic ring as recited in Claim 17 can be seen in Figure 4 of the present application.

Moreover, the recited in Claim 17 is clearly different from the structure shown in Figures 9 and 10 of Casey. In Figures 9 and 10 of Casey, the loop is attached to the end wall of the cap at opposed sides of the cap, separated by about 180°. The result is that the loop extends over the opening of the cap. Since the loop of Casey is not to be attached to any other part of the orthodontic appliance, this is not a specific disadvantage. However, the protective device of the claimed invention is to be fixed around the molar tube, thereby securing the cap over the archwire. If the cap of Casey were to be used for the purpose of the present invention, it would not only be more difficult to secure the end of the archwire in the cap, but the cap would

need to be twisted in order to both secure the loop to the molar tube and to secure the archwire in the cap. This is clearly a disadvantage, as the claimed protector can be attached to the molar tube and secure the archwire without twisting.

In addition, new independent Claim 22 recites the oral mucous membrane protector of claim 17 without the orthodontic appliance, and dependent Claims 18-21 and 23-26 correspond to other dependent claims in the application.

Withdrawal of this rejection is accordingly requested.

In view of the foregoing amendments and remarks, Applicant submits that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,



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